

**Progress Report on Funded Nursery Projects
Washington State Department of Agriculture**

Date: 12/29/04

Project Title: Botrytis Suppression with Compost Teas on Herbs and Bedding Plants

Project Leader: Alison Kutz-Troutman

Progress: To be submitted for all projects funded in FY05 (July 1, 2003 to June 30, 2004)

In 2004, which was the second year funded for this study, the treatment work took place at Cascade Cuts in Bellingham, WA. We were pleased to have all the details back within arms reach, as the 2003 work took place in a quarantined greenhouse in Sequim, for various reasons.

Set up and design was improved by making some revisions in the way that the money and energy was spent: we submitted some proposed changes on 8/30/04, and had various discussions at that time with Tom Wessels and WSNLA advisors. The basic changes from 2003 included dropping the detached leaf assay portion that had been previously conducted, and adding 3 pathogen inhibition assays for the fungal disease in question, *Botrytis cinerea*. This allowed us to focus the scope of the work on the front end, rather than as a post-treatment analysis, and I think increased our chances of developing better tea "recipes" at the beginning of our study. This biological work is still truly in its infancy, so working with this type of problem solving is a perfect example of what labs are doing for private customers who are looking for specific types of disease suppression from regionally available composts in their areas. The closer we can come to real life treatments and protocols, the more transferable this information becomes to the lay practitioner, the grower that wants to develop their own natural solutions to a variety of crop specific diseases, like *Xanthomonas*, *Pythium*, *Rhizoctonia*, etc. The in vitro version of the earlier detached leaf assays did not provide us with statistically significant information in year one. It also became apparent that the live plants provided us the best information, when we carefully noted the lesion progression, both during and after tea treatments. The statistical analysis from year one is incredibly complex for me, and I am still grappling with how to best to present this synopsis, as the Poinsettias in year one were very significantly protected by the tea treatment, and were healthier than the chemically treated plants.

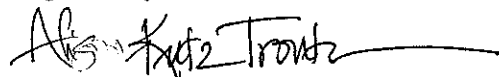
The 2004 study has shown us many things, including some side benefits that I went ahead and collected data on. Although these are just now getting plugged in for statistical analysis, preliminary data suggests healthier plants on at least 3 or 5 types, and yield data was surprisingly significant on at least one plant that was hard to collect lesion data on (Chives.) Flowering appeared earlier on the Cyclamen, an economically significant factor, and at SPAD or Photosynthesis readings were included this year as well, which will be an very interesting indicator of overall nutrient uptake and operating efficiency of the plant. Raw data collected was extensive, to say the least, and hours used will likely well exceed the scope of finances, but since this was not written into the grant, but I felt it important, I was happy to gather this information. I look forward to getting

reports back from a third party, Vicki Bess at BBC. She was a wonderful help with some of the changes made this year, and I have learned a lot this fall by listening to skilled researchers like Jane Sooby with OFRF, and Woody Derryk, and others at the Tilth conference. Organic and more sustainable production is happening everywhere in Ag, so I appreciate very much the opportunity to learn from others in the field of applied on farm research, and learn how to transfer this valuable information that other growers are gathering and translating it into horticultural terms, which tend to be much trickier. (Artificial mediums, concentrated greenhouse environments, etc.) My intent is to continue to learn more improved ways of observing plants, and measuring the most important details. I have found myself helping many growers set up simple trials, and encouraged them to collect and share information to their best ability.

I look very much forward to synthesizing all this information into a user-friendly report (now underway) which can help growers practice more sustainable horticultural methods. I believe that this will help our industry image tremendously, and helps validate our cautious use of chemicals when they are absolutely necessary. Education and awareness are key, and I will make myself fully available to any parties interested to present this information in an accurate, un-biased manner. I think what we will see, overall, is that the teas seem to be quite efficacious for a wide array of reasons, most importantly, helping to boost nutrient uptake, and the healthier a plant is, the better able it is to resist disease pressure. Some of the plants that we used in the study this year were grown a bit cooler than the grower standard (Poinsettias at 60 F nights). This impacted the plants to a certain degree, adding to the stress and disease pressure. When disease pressure is really high, the natural biocontrols have a difficult time overpowering the pathogen in question, yet we see that they still held their own, to a great degree. The numbers will tell the story.

Thanks for your trust in this work.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Alison Kutz-Troutman", with a long horizontal flourish extending to the right.

Alison Kutz-Troutman